

In re Patent Application of:  
**BONHOMME**  
Serial No. 09/993,913  
Filed: **NOVEMBER 6, 2001**

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**In the Claims:**

Claims 1-14 (Cancelled).

15. (Previously presented) A method of estimating an impulse response of an information transmission channel in a signal propagation environment and comprising:

estimating the impulse response based upon a useful number of coefficients of the impulse response, the useful number of coefficients being a function of the signal propagation environment, by

providing an initial estimate of the impulse response based upon a predetermined number of the coefficients,

determining a time domain spreading parameter based upon the initial estimate,

using the time domain spreading parameter to determine the useful number of coefficients, and

providing a final estimate of the impulse response based upon the useful number of coefficients.

16. (Cancelled).

17. (Previously presented) The method of Claim 15 wherein providing the final estimate comprises correcting the first estimate by cancelling a number of coefficients equal to a difference between the predetermined maximum number and the

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useful number of coefficients.

18. (Previously presented) The method of Claim 15 wherein using the time domain spreading parameter to determine the useful number of coefficients comprises comparing the time domain spreading parameter with a plurality of predetermined spreading parameter values each corresponding to a different time domain spreading of the transmission channel.

19. (Currently Amended) A method of estimating an impulse response of an information transmission channel in a signal propagation environment and comprising:

determining a useful number of coefficients of the impulse response as a function of the signal propagation environment based upon a time domain spreading parameter by comparing the time domain spreading parameter with a plurality of predetermined spreading parameter values each corresponding to a different time domain spreading of the transmission channel; and

estimating the impulse response based upon the useful number of coefficients.

20. (Cancelled).

21. (Previously presented) A device for estimating an impulse response of an information transmission channel in a signal propagation environment comprising:

a processing stage;

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said processing stage comprising evaluation means for defining a useful number of coefficients of the impulse response as a function of the signal propagation environment and for estimating the impulse response based upon the useful number of coefficients by

providing an initial estimate of the impulse response based upon a predetermined number of the coefficients,

determining a time domain spreading parameter based upon the initial estimate,

using the time domain spreading parameter to determine the useful number of coefficients, and

providing a final estimate of the impulse response based upon the useful number of coefficients.

Claims 22-24 (Cancelled).

25. (Previously presented) The device of Claim 21 wherein said processing stage further comprises correction means for providing the final estimate by correcting the first estimate by cancelling a number of coefficients equal to a difference between the predetermined number and the useful number of coefficients.

26. (Previously presented) The device of Claim 21 wherein said evaluation means comprise:

a memory having a plurality of predetermined spreading

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parameter values stored therein each corresponding to a respective time domain spreading of the transmission channel; and a comparator for comparing the time domain spreading parameter with the predetermined spreading parameter values.

27. (Previously presented) A device for estimating the impulse response of an information transmission channel in a signal propagation environment comprising:

an evaluator for determining a useful number of coefficients of the impulse response as a function of the signal propagation environment by

providing an initial estimate of the impulse response based upon a predetermined number of the coefficients,

determining a time domain spreading parameter based upon the initial estimate, and

using the time domain spreading parameter to determine the useful number of coefficients; and estimation circuitry for providing a final estimate of the impulse response based upon the useful number of coefficients.

Claims 28-30 (Cancelled).

31. (Previously presented) The device of Claim 27 wherein said estimation circuitry derives the final estimate by correcting the first estimate by cancelling a number of

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coefficients equal to a difference between the predetermined maximum number and the useful number of coefficients.

32. (Previously presented) The device of Claim 27 further comprising a memory having a plurality of predetermined values of spreading parameters each corresponding to different time domain spreading of the transmission channel stored therein; and wherein said evaluator further comprises a comparator for comparing the time domain spreading parameter with the predetermined values.

33. (Previously presented) A cellular telephone comprising:

an antenna;

a receiver for receiving cellular signals via said antenna from a base station over an information transmission channel in a signal propagating environment; and

a processing stage for estimating an impulse response of the information transmission channel the signal propagation environment and comprising evaluation means for defining a useful number of coefficients of the impulse response as a function of the signal propagation environment, and for estimating the impulse response based upon the useful number of coefficients by

providing an initial estimate of the impulse response based upon a predetermined number of the coefficients,

determining a time domain spreading parameter

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based upon the initial estimate,  
using the time domain spreading parameter to  
determine the useful number of coefficients, and  
providing a final estimate of the impulse response  
based upon the useful number of coefficients.

Claims 34-36 (Cancelled).

37. (Previously presented) The cellular telephone of Claim 33 wherein said processing stage further comprises correction means for correcting the first estimate by cancelling a number of coefficients equal to a difference between the predetermined maximum number and the useful number of coefficients.

38. (Previously presented) A computer-readable medium having computer-executable instructions for estimating an impulse response of an information transmission channel in a signal propagation environment by performing a step comprising:

estimating the impulse response based upon a useful number of coefficients of the impulse response, the useful number of coefficients being a function of the signal propagation environment by

providing an initial estimate of the impulse response based upon a predetermined number of the coefficients,

determining a time domain spreading parameter

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based upon the initial estimate,  
using the time domain spreading parameter to  
determine the useful number of coefficients, and  
providing a final estimate of the impulse response  
based upon the useful number of coefficients.

39. (Cancelled).

40. (Previously presented) The computer-readable medium of Claim 38 wherein providing the final estimate comprises correcting the first estimate by cancelling a number of coefficients equal to a difference between the predetermined maximum number and the useful number of coefficients.

41. (Previously presented) The computer-readable medium of Claim 38 wherein using the time domain spreading parameter to determine the useful number of coefficients comprises comparing the time domain spreading parameter with a plurality of predetermined spreading parameter values each corresponding to a different time domain spreading of the transmission channel.